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COSMOLOGY:

A Treatise

DEFINING

A NEW THEORY

OF THE

CONSTRUCTION AND OPERATION

OF THE

UNIVERSE.

BY SAMUEL CLARK,
PATTERN AND MODEL MAKER.

Patterns for Steam Engines, Machinery, Machinist's Tools, Gearing, Brass Finishers, Gas Fitters, Furnitures, Stoves, or of any description made to order.
Also, Models, Millwright Work, &c.

219 CENTRE STREET,
(*Four doors below Grand St.*)

New-York:
PUBLISHED BY THE AUTHOR.

1860.

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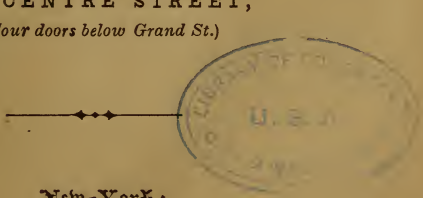

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PREFACE.

In presuming to offer to the public this work, it is perhaps proper that I should also offer an excuse for any want of arrangement or other fault that may be found in it. Inditing a work for publication is no part of my vocation, and this is a novel effort, performed under a multitude of serious disadvantages; among which is want of time, my ordinary business taxing me in time, and mentally and physically, to the utmost. Its publication was suggested to my mind in the early part of the year, by the strenuous and apparently unsuccessful efforts of Dr. Hayes to obtain an outfit for his Arctic expedition, as being a material aid to him, by its theory and evidence, in accomplishing his object; but his expedition sailed before I could find time to commence inditing it, and it would not probably have been yet commenced, but for my having been confined to my room for several days from indisposition, during which time it was indited. I have not had time to even critically revise it; but as it was first indited, even so is it published. Nevertheless, having endeavored to, I hope I have so expressed my ideas as that they may be readily comprehended by the most unsophisticated astronomist, and at least by professors.

It will be found to be almost strictly confined to defining and proving the theories, and entirely free from dissertation, and almost of observation and remark.

In inditing the work, I have used that most excellent work, "Popular Astronomy," by Professor O. M. Mitchel, as my text-book, which has been a material aid to me.

When finished, I submitted the manuscript to the consideration of an eminent publisher, who in turn referred it to his reader, who having read the first two pages, defining the theory, forthwith condemned it; stating that he supposed I intended it as a work of fiction; when, upon my assuring him to the contrary, and that I had no doubt of the correctness of the theory, he remarked, that inasmuch as he knew that two and two made four, he knew that the theory was not true; and though he did not say so in direct words, yet he very strongly insinuated, with a stare, that I must be deficient in mental soundness; which might possibly have had a very paralyzing effect, had not the more gentlemanly proprietor, upon my saying to him that he might publish it, take out his costs and profits, and pay me what he chose of any balance, assured me that I certainly was a very sensible man—(emphatically) a very sensible man indeed.

Though I was treated with courteous consideration in other places, yet I soon found that it was too extensive a conception to get published by the publishing profession; I have consequently turned publisher myself, and have also affixed to it my business card.

COSMOLOGY.

A QUARTER of a century and more ago, when about fifteen years of age, an apprentice to the cabinet-making business, in the city of New-York, my native place, with extremely limited means, but great ambition, and buoyant hope for the future, and consequently, even at that early age, a philosopher, I was, upon a beautifully pleasant afternoon, the sun about three or four hours past meridian, sitting upon the seats of the Battery, adjoining the sea-wall, looking off upon the bay and its contiguous scenery. At that time the Battery park was kept by the city authorities in a somewhat respectable condition, and it was noted as and was a most beautiful resort, on a warm or sultry day or

evening; the bay and its shipping and the scenery presenting a beautiful view to the sight, and exhilarating effect upon the senses, while the invigorating breeze stimulated the heat-depressed energies.

I used to think that it only required the removal of the rude border-railing, and a sea-wall of broad marble steps, to make the place fairy-like.

It was my favorite resort on evenings and on Sundays—the only leisure time I was possessed of. I very possibly had been sitting there for hours, enjoying the breeze, scenery, etc., until the sun had got to shine somewhat directly into my face, which attracted my attention, and set me to philosophizing on its nature and construction.

I had read or heard that it was considered to be a vast globe in a state of combustion, but I had also learned, even at that age, that the *ipse dixit* of any person, and even common received theories, were not always true, and therefore to consider nothing as certain that I did not know to be so myself; whereupon I un-

hesitatingly developed the audacity to presume to think for myself.

It readily occurred to me that, according to this theory, it must be a somewhat extensive fire, and that it would require an enormous amount of combustible material to keep it agoing; and that the supply of material must be very regular to keep up the uniform brilliancy which had been known to exist from time immemorial. I found, though possessed of a good pair of eyes, that it was impossible to look directly at it with them extended, I thereupon developed the sagacity to close them tight, and proceeded to slowly and cautiously open them; and was exceedingly pleased to find that in this way I could look directly at it. If I had doubts of its being a globe in a state of combustion before, when I came to see the dark and distinct outline at its periphery, and the darkness extending from it, the doubts were not only removed, but the theory considered an absurdity; for it was obvious if the theory was correct, the scintillations of light and heat must

operate perpendicularly to the line of sight, as well as direct, which it was certain they did not.

I looked again; and when I saw the perfect evenness of its surface, I thought it could not be matter, but was simply space; and consequently a hole through matter, through which I thought I could extend the line of vision.

Since then, I have repeatedly explained the theory to my fellow-workmen, and to others, where its consideration ended, with the exception of the sun being sometimes jocosely alluded to as Clark's big hole.

Nevertheless, from what little astronomical knowledge I have since acquired, I have not only been confirmed in the theory, but all doubts of its correctness have long since been removed, and I expect to produce an array of evidence in this work, tending to prove that the sun and fixed stars are simply holes through a vast, hollow, spherical orb, emitting light from its outer surface, where it is universal and eternal; and, consequently, that light is nat-

ural to the creation, and that darkness only exists when there is an obstruction; and that the planets, the earth included, and all moving stars and comets, are hollow spheres, with apertures at their poles, whereby communication can be had between their outer and inner surfaces—that will cause the theory to be received as no hypothesis, but as an undoubted certainty.

I am aware, and it is to be presumed, that the great body of superficial thinkers, from the sublimeness and grandeur of the theory, will, at first conception, deride it; to such I have simply to say, that were this earth solid, and composed of the finest-grained sand, there may be, for all we know or can conceive, as many more such celestial spheres as there would be grains of sand in the earth, and even that, indefinitely multiplied; it only goes to show the diminutive paucity of human knowledge, or even conception, and vastly more of humanity itself, when compared to the universe.

It is, perhaps, proper to say here, that I be-

lieve that this theory does not alter the result of any positive astronomical calculation now made, but will be found to simplify and extend them.

So far as we have any positive knowledge of the heavenly luminaries, they may be divided strictly into two classes, viz.: fixed and moving; fixed stars have light of themselves, and transmit it the same as the sun, while all moving stars have no light of themselves, but receive and reflect it.

The fixed stars have been, since record has been kept, unalterable in their position to each other; now, it does not appear to me reasonable, to suppose that such bodies of matter, floating in space, and with no other connection, would remain so immovably and continuously in position to each other; but it certainly appears much more reasonable, to suppose that their connections are matter, and they, simply holes through the matter, through which light is transmitted.

I consider the sun, and each fixed star, an

aperture through a vast, hollow, spherical orb, probably about five billions (5,000,000,000) of miles in diameter, which I shall hereafter designate as the celestial sphere, outside of which is universal light, which is transmitted, through the apertures, to its interior, and that each fixed star has a system of planets, revolving to its influence, the same as the sun.

I consider that the planets revolve in orbits; that a line drawn from the centre of the sun's disk, or aperture, and perpendicular to its plane, would be the centre of their motion (which line, I think, can properly be named the zodiac, for simplicity, and easy comprehension; I shall so designate it in this work); and that they revolve in increased orbits, in proportion to their distance from the sun, so that, a line connecting the sun and their orbits, and revolving around the same, would be the generatrix of a cone; and what is now known as the line of the ecliptic, the sun being the vertex, and the zodiac its axis, and that the plane of the orbits, and the axes of Mars, the earth, Venus,

and Mercury, are in line with, and governed by, the earth's polar star, varied, to some extent, by perturbing influences.

The plane of the orbits, and the axes of Jupiter and Saturn, I presume, are governed by some other fixed star or stars.

Uranus and Neptune, I consider, are planets of some fixed star or aperture. This theory is materially confirmed by the retrograde motion of the satellites of Uranus, and admirably accounts for their motion, which, also, materially confirms the general theory.

Ascertained astronomical facts show, that a line drawn perpendicular to the zodiac, and extending to the polar star, would pass between the earth and Mars, but nearest to the earth; and, consequently, as the plane of the orbits, and the axis of Mars, the earth, Venus, and Mercury, are in line with the polar star, it is a corollary, that in proportion as the planets' distance from the said perpendicular line, so would their orbits be an elongated ellipse. The earth being very near it, its orbit is almost cir-

cular, perhaps sufficiently so for astronomical calculations or measurements.

This theory of the planetary motions, obviously and simply accounts for the perihelion and aphelion points of their orbits, the solstices, the difference in solar and sidereal time, the obliquity of the ecliptic, conjunctions, and oppositions, and all planetary facts known, without the conception of some new hypothesis for each particular fact. The difference in time in the earth's passing the north and south portions of its orbit, is accounted for by the angles of oscillation, or nutation of the earth's axis, by which the plane of the equator is brought in line with the sun north of the east and west points of its orbit. By supposing that the earth is slowly enlarging its orbit, and, consequently, increasing its distance from the sun, which is obviously the case, accounts for the retrocession of the equinoxes, the change in the angle of the ecliptic, and the apparent motion of the sun, the polar star, and the heavens.

The third motion of the earth in its annual

orbit, is accounted for by the east and west oscillations of its axis, and also the change in the position of the sun at noon, throughout the year, by the east and west motions of the earth in its annual revolution.

The zodiacal light is undoubtedly the direct rays of the light from the sun in the line of their greatest intensity, which would be in the direction of the zodiac, and varying in intensity in proportion to their obliqueness; it forms the cone of the planets' orbits; its intervening and its brightness is the reason why the planets cannot be seen when in superior conjunction; its position at the different seasons of the year materially confirms my whole theory.

According to this theory, it will be perceived, that the orbits of the planets are an ellipse; but that the earth's orbit, from its near approach to a perpendicular line to the zodiac, is very near a true circle, the form of the earth's orbit could be satisfactorily ascertained, and with all important results, by an observer sta-

tioned strictly on the equator, noting every midnight zenith throughout the year, which would also give the proportional velocity of the earth in its orbit, when it would only be required to know the velocity at any period to know the diameter of the orbit, which would be the great desideratum, a satisfactory astronomical base line, by which, even the diameter of the celestial sphere, or the distance of the most remote fixed star, could possibly be satisfactorily trigonometrically measured.

The earth's velocity in its orbit could be ascertained by two observers on a meridian, at a known distance apart, noting the time a line, perpendicular to the line of the polar star, passed the sun's centre, when the earth was passing an equinox.

Supposing the earth's distance from the sun to be ninety-five millions of miles, according to the angle of the ecliptic, the diameter of the earth's orbit should be about seventy-five millions of miles; which would make it pass the distance from the equator to the north pole in about ten

minutes, consequently it would be an item to have good observers and instruments. If an observer could be placed at the south pole, and looking through the north pole, have a view of the polar star, which, I have no doubt, is possible, the earth's velocity in its orbit might be computed with the most satisfactory accuracy, or a south polar point could be noted for the purpose.

The appearance of the heavens in the annual revolution of the earth in its orbit confirms my theory, but I would particularly note the experiment of the elder Herschel, in which he noted the number of stars seen through a certain telescopic disk at different successive points from the polar star to an angle of ninety degrees, which, it must be also noted, came in contact with the zodiacal light. In this experiment, at the first view near the polar star, there were but four stars seen on the disk, and in each successive view they gradually increased in number, until, at an angle of ninety degrees, there was one hundred and twenty-two seen at one view.

My theory accounts for this fact in a very obvious and simple manner. The number of stars seen on the telescopic disk would, of course, be in proportion to their distance; and the polar star being on the near side of the celestial sphere, its proximity would show the least number, whereas an angle of ninety degrees would be in the direction of the centre of the celestial sphere. If this fact does not absolutely confirm the theory, it certainly is a great confirmation of it, and is a fact that it is extremely difficult, if not impossible, to account for in any other way.

The appearance of the clusters of stars in the heavens also strongly prove my theory; they undoubtedly being planetary systems, revolving to and governed by some fixed star or celestial aperture; those near the zodiacal light appear circular, because their zodiac is in line with the line of sight, and inasmuch as they approach the line of the poles of the earth, they assume conical and irregular forms on account of its obliqueness to the line of sight.

It would be a very effective way to prove the theory, and at the same time obtain the angles of the ecliptic at the solstices, by measuring them with the line of the polar star; when, if true, they would be found to vary, in proportion to the angle of the plane of the earth's orbit, or the line of the polar star, with the zodiac, and it would give the angle of the same. This, and other measurements I have suggested, would of course require very expertly constructed instruments, by which the line of the polar star could be retained as an axis, for a line perpendicular to it, to revolve upon.

According to this theory, for a transit of the planets Mercury and Venus to occur, across the centre of the sun's disk, the earth, the planet, and the sun, would require to be in a right line—in the line of the ecliptic, as I have heretofore defined it, viz.: the generatrix of a cone, connecting and revolving around the planetary orbits and the sun. And inasmuch as the earth varied from that position, would the planet appear to cross near, or beyond the

periphery, or limb of the sun's disk; this, of course, would be caused by the different velocities of the earth and the planet in their orbits.

My theory also accounts for, in an obvious manner, and is also materially confirmed by, the appearance and motion of the spots seen, apparently on the sun's surface—they undoubtedly being nebulous matter, probably revolving in orbits parallel to the interior surface of the celestial sphere. Their penumbra is accounted for by the refraction of light, which partially illuminates their near side, by their close proximity to the sun. Their movements plainly show that they cannot be a fixture of the sun's constitution, for they move independently of each other, at different periodic times.

I consider the evidence as abundant to show that the rays of light from the sun have no material heat in their natural condition, and that the temperature at the earth's surface is caused by their obstruction, reflection, and concentration; and consequently, as I believe, is

universally the case, in proportion as the earth's surface is perpendicular to the line of the sun, the area of surface exposed, its levelness, or concavity, and the duration of the exposure, so is the heat of the climate, minus the effect of one season upon the other, and perhaps governed some by the density of the atmosphere.

The sun crossing the zenith of each place between the poles twice each year, it would follow that there would be two equally hot periods each year; but inasmuch as the period when it crosses from the equator to the poles, and in proportion to its distance from the equator, would evidently be affected by the preceding season, its rays must have their greatest effect upon a place when crossing its zenith from the poles to the equator; the vaporous condition of the atmosphere at times, must, of course, by obstruction, modify their intensity, in all places and seasons.

According to this theory, it is possible, and even probable, that the planets and the outer

and inner surfaces of the celestial sphere have climates similar to the earth; in which case, if a communication, could be had with the celestial sphere, a good-sized farm could probably be got cheap.

Comets I consider to be orbs, revolving with their axis in line with, and governed by the sun, and possibly revolving around the zodiac, in an orbit of a very elongated ellipse, but probably planets of some fixed stars; that they are hollow spheres, which feature of construction I shall hereafter adduce further evidence to show is applicable to all heavenly orbs; and that their peculiar appearance is caused by their interior spherical surface becoming an immense concave reflector, concentrating the rays of light from the sun, entering at the nearest pole, to a focus at their axis; which intense concentration of light, scintillating through their poles, produces the phenomena known as their tails. This theory is materially confirmed by the fact of their principal tail, as it is called, preceding them, in their retrograde motion

from the sun ; a fact which it is difficult, if not impossible to accouut for in any other way ; it is also materially confirmed by the careful and admirable observations and notes of Professor O. M. Mitchel, of the great comet of 1858, at Cincinnati.

I now come to the theory of the heavenly orbs being hollow spheres ; and in substantiating it, I will first array the evidence in regard to the earth ; and in doing so, it appears to be first in order for me to state, that I consider the white race of human beings on the earth's surface to be the descendants of the inhabitants of the interior surface. In corroboration of this, it will be noticed, that the natives of the most northerly inhabited latitudes are all white ; and in proportion as we near the equator, so does the two colors become mixed. Egypt and Assyria seem to have been the places where the two races, white and black, came together and mixed, producing the intermediate shades, which now mainly inhabit the southern coast of Asia.

It is known that plants reared in darkness are white; and if it should prove to be, as claimed, that the earth is a hollow sphere, it is obvious that darkness must prevail to a great extent on its internal surface; and what light it does have, must be mainly by reflection, and to a comparatively small extent from direct rays from the sun. It is evidently reasonable, then, to suppose that human beings, animals, and productions, reared in such a place, should be white.

We know that the negro is originally a native of the equator, the place on the earth's surface where the rays from the sun have their greatest power; and if it should prove that an interior surface of the earth is inhabited by white human beings, it is evident that they are the progenitors of the white race on its outer surface.

We have the evidence of Dr. Kane's expedition, that there exists an open sea at the north pole, of moderate temperature: and in corroboration, we know that an enormous body of

water flows continuously from Smith's, Wellington, and the adjoining channels, into Davis' strait and the Atlantic ocean, and there meeting the tides of the Gulf stream and South Atlantic, is turned in its course, and together they flow to the north pole, by way of Spitzbergen. I would ask now, where does this enormous body of water go to; there is no visible outlet; the quantity of water that may flow through Bhering's strait is insignificant compared to the Atlantic ocean. I consider it self-evident, that it must have a course through the centre or interior of the earth; and the great body of it returning by way of the south pole, re-supplies the great current of the Atlantic ocean, which continuously flows north.

Again: it is evident, and is also confirmed by observation, that the water that enters the channels at the head of Baffin's bay, must be at a comparatively high temperature; for it could not be the atmosphere, and must be the water, that detaches the large quantities of ice, comprising hundreds of miles of surface and

mountains in bulk, which is carried down through Davis' strait toward and into the Atlantic ocean, melting them in its course. Now, the idea suggests itself, where and how does the water get this high temperature? It is certain that it does not possess it when it enters the Arctic or Polar ocean from the Atlantic.

This reasoning and evidence, together with the earth's flatness near the poles, I consider ample to show that Capt. Simms' theory of the earth being a hollow sphere, with apertures at the poles, by which communication can be had between the outer and inner surfaces, is not only probable, but a reasonable certainty. But there is other evidence, which to me removes all doubts.

Dr. Kane found at Smith's strait, the extreme northern coast of Baffin's bay, one hundred and seventy human beings. Now, it is evidently certain, that their progenitors were not originated in that locality; and consequently the question arises, where did they come from? They certainly did not go there

from the southern coast of Greenland to ameliorate their condition; and it is quite as certain that they did not go there on a scientific exploring expedition, and it is very questionable whether they could get there at all, against the tide and climate, from the southern coast of Greenland.

The whole history of human migration goes to show that it is universally toward more moderate climes. I consider it conclusive that they were thrown upon that truly and extremely inhospitable coast by the action of the great current of water flowing against it, and through the adjoining channels, from the interior surface of the earth, by way of the north pole; and in like manner, and by migrations southward, have the inhabitants of the coast of Greenland and the Channel islands originated.

I will here presume to interpolate my ideas of the best mode of organizing an expedition to prove this theory of the earth's construction, and if found correct, to open communication with and survey its interior surface.

Experience has shown that it is rarely if ever possible for communication to be had by water, between the outer and inner surfaces; and as there can be no doubt but that after passing a short distance interior of the pole, the climate would be moderate, interior water transportation would be an item, if not a necessity, to a party exploring its regions and peculiarities.

Therefore, I propose that not less than ten or twelve boats should be constructed, each of about twenty tons burden, with strictly flat bottoms, wall sides, and tapering ends, and with runners permanently attached to their bottoms at their outer edges.

I have made marine architecture a material portion of my study for a quarter of a century, and consider that I thoroughly understand the subject, and say, that vessels constructed in such a manner are fully as safe, for ocean navigation, under all circumstances, as the convex-formed vessels now constructed, and, if properly understood, and managed, will make

about as good time, while the wall sides will give the desired and requisite strength for transportation upon runners, without damage to their sea-going qualities.

An expedition, in such a number of vessels, with appliances, and a combination of their crews, would have the means of raising the vessels out of the water upon solid bearings, with immunity; and, on a reasonably level surface, their sails would be a propelling power, as well as in the water, and, it would also obviously have a number of other material advantages.

To an expedition so organized, the best and most available route will probably be found to be by way of the south pole, contiguous to which, most likely, would be the most dense population, on account of the direct rays of light from the sun penetrating there longer annually than at the north pole. I have no doubt but that quite a dense population will be found to exist on the earth's interior surface.

I now come to the evidence in regard to the

planets beiug hollow spheres; and with the exception of the evidence adduced in regard to the earth and comets as a precedent, I shall have mainly to rely upon the excellent observations, notes, and drawings, of Professor Mitchel, of the planet Mars, in 1845.

I think that, if the astronomical profession will assume my theory as correct, they will find, not only all observed appearances of the bright spot, or snow zone, at the planet's south pole, accounted for, but the theory materially proved. If it is a snow zone, its northern boundary should be indistinct; whereas, according to the illustration by Professor Mitchel, the reverse is the case, and its northern boundary is distinctly marked. Now, by assuming that the dark margin comes, like other portions of the outer surface, immediately contiguous, and the uniform brightness of the polar spot from the reflection of the rays of light from the sun by the interior surface of the planet, we have its appearance accounted for. It will be noticed that the planets Earth,

and Mars, are in precisely the proper position, in their orbits, at the time of observations, according to my theory, for the appearances observed. Mars was closely approaching its perihelion and northern solstice, while the earth was immediately following, toward its winter solstice and aphelion, in a smaller orbit, and with a greater velocity.

The dark spot seen in the bright polar spot, on the night of July 12th, 1845, by Professor Mitchel, is accounted for by supposing it to be part of the hemisphere opposite to the direct rays of light from the sun; of a small orb revolving interior of the planet, but seen through the aperture of its south pole; it must be noticed that Mars and the earth were exactly in position in their orbits for this view to occur; supposing the bright polar spot to be a polar aperture, and the orb revolving interiorly, it could not occur in the evening in any other position of the planets in their orbits, and in only one other position at any time; the south pole of Mars was in its most brilliant position

to the sun, while the dark side of the interior orb was in strong contrast.

Again, on the evening of the 29th of August, the supposed snow zone showed a figure like a rectangle, with its corners rounded; this is plainly accounted for, for the earth, by its greater velocity and smaller orbit, was assuming a position in line with the plane of the polar aperture.

On the evening of the 30th of August, a small bright spot appeared on the polar spot, or supposed snow zone; this is undoubtedly the orb or black spot seen on July 12th; the earth having now assumed a position nearer in line with the sun, only the illuminated hemisphere of the small orb revolving interiorly was to be seen, and that in its most brilliant position; while the brightness of the polar aperture, from its plane having assumed a line approaching the line of vision, would probably appear dulled, producing the effect of making the internal orb appear to project out from the surface of the polar disk.

The diameter of the polar spot also agrees with what would be supposed to be the size of an aperture if one existed; being about one tenth of the diameter of the planet, or about four hundred miles.

According to my theory, it would be a consideration to have a careful examination of the north pole of Mars, when the earth was at an equinox, and Mars at the southeast or southwest points of its orbit, according as the earth was at the east or west equinox, as this would be about the best position to view it, if a telescope will delineate its features with sufficient distinctness at that distance.

The position and revolution of Saturn and its rings, is no immaterial confirmation of the theory, that the heavenly orbs are hollow spheres; but taken in connection with the evidence I have herein adduced, they materially confirm the possibility, if not the probability, of it.

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